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ABSTRACT

A study examined one first-grade teacher's use of inquiry pedagogy to maximize literacy learning and teaching in her classroom. The setting for the study was a classroom in the Cleveland, Ohio, School District. In this classroom literacy events build upon students' prior knowledge and experience gleaned from their lives outside the classroom and from what they do within the classroom community. Data were collected through interviews during the first 10 weeks of the school year. Inductive data analysis uncovered tentative categories that were refined through the constant-comparative method. A pattern emerges from analysis of the data, appearing in several variants. Comments in the data indicated segments pertaining to evaluation yielded four domains: observing, listening, assessing, and self-evaluating. The two domains that emerged from analysis of the data relevant to documentation are individual and wholistic. Many data segments demonstrate how information gathered feeds back into the decision making process in both formative and summative ways. Results indicated six significant dimensions of the inquiry pedagogy: (1) prospective/retrospective; (2) molar/molecular; (3) question answering/question asking; (4) planful/in flight; (5) formality/informality; and (6) introspective/enacted. Findings suggest that reciprocity, with the teacher as the learner and the learners as teachers, and both as inquirers, is the essence of inquiry pedagogy. Implications for staff development are that issues of process and affect need to be addressed and the evolving nature of the inquiry pedagogy process needs support. Further research is suggested. (Contains a table of data, 2 figures, and 30 references.) (CR)

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Inquiry Pedagogy: Maximizing Literacy

Learning and Teaching Through Shared Inquiry

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A Classroom Vignette: "Where Do You Live?"

It is 10:35 a.m. on Thursday morning in late September, and the first graders in Miss Hughes' classroom are drawing or writing in response to the question "Where do you live?" for their bellwork assignment. Miss Hughes asks the children to gather on the carpet and share their work. Volunteers stand and describe where they live. The responses vary. Willis says he has a bear in a cage in his backyard; Miss Hughes responds, "Oh my!" Another child says, "I have a bear in my attic." Mateka says she lives in a "big building" and the "elevator doors are colored green." When Terrell speaks inaudibly Miss Hughes says, "We can't hear you." Then Tyrone answers, "I live with him." Miss Hughes says, "You and Terrell live together?" Sometimes Miss Hughes says, "Tell us a little bit about your house" and clarifies the description by asking questions such as "Does it have an upstairs and a downstairs?"

At 10:45 a.m. Miss Hughes asks the children to go get their copies of Brown Bear, Brown Bear, What Do You See? After the children return to the carpet with their copies, Miss Hughes asks them to think about the animals in the book and where they live. She begins to read from a big book of Brown Bear. She points to the words as she reads and asks the children to do the same. One child asks why they are doing that and she replies, "Because I get a lot of information that way." During the shared reading, Miss Hughes watches the children. At one point she stops reading herself and only points and watches the children. Then she reads the last line with the children.

Next Miss Hughes asks the children to reread the animal names written on cards and displayed on a pocket chart. Then she distributes pictures of the animals and asks the children, in

groups of three, to match the picture to the word. Sonya places her picture with one animal name, then moves it to another. Miss Hughes asks, "Why did you change your mind?" Sonya explains the beginning letter in the first word didn't indicate the beginning sound of the animal name. Miss Hughes replies, "Good. You used information in your head!" They check the animal names again, and Miss Hughes tells them that she will leave them on the chart for future reference.

Miss Hughes then involves the children in a shared reading of another book, Why Polar Bears Like the Arctic. She asks the children if they think the book will be about real life or fantasy and why. Joey thinks it must be fantasy, not real life, because polar bears live in the North Pole and "they can't come down here [Arctic]." Miss Hughes explains the Arctic is where the North Pole is and asks, "What do you think now?"

As Miss Hughes reads and points to the words, some children start to read along, especially on the repetitive phrases. After the reading, she asks, "What is the other name for the Arctic?" Joey answers, "North Pole." Miss Hughes then asks the students to think about all the places animals in the story lived; as they name the places she writes them on a chart. When Darnell names the zoo, Miss Hughes asks, "Did that come out in this story?" Darnell says, "No." Miss Hughes repeats, "No. But very good."

Then the children join Miss Hughes in a shared reading of Where Do You Live? Although this book has a more fictional presentation than the previously read book, it too identifies places animals live. Once again, Miss Hughes points to the words and observes the students as she reads. She pauses before saying "monkey" and then asks a child who reads it to explain how she knew the word was "monkey." She says she looked at the "m." Miss Hughes

asks, "How else?" The child says she knew it ended with the /e/ sound.

As before, Miss Hughes asks the children to identify places animals in this book live. Then she says, "Here's your task." They read the animal names on the pocket chart again. "Pick a partner and look at me." When the children are paired and looking at her, she continues, "Pick 4 animal names, decide where they live." She gives them a sheet of paper and asks them to draw the animals and where they live and to label the drawing. "Use your best spelling. Don't ask Miss Hughes how to spell it; I'll say, `How does it sound?' Use your book or some other books. After lunch we'll share and decide what to do next. I am so proud of Nana and her partner. [pause] By now you should be in your work spot." Sarah shares another possibility, "Could we use other animals than in Brown Bear?" Miss Hughes affirms this is a good idea. The students work together in pairs until 11:35 a.m. when they go to lunch.

Purpose of the Study

This vignette of a typical literacy event in Miss Hughes's classroom was constructed from field notes taken during an observation on September 29, 1994. It illustrates the defining elements of Sharon's inquiry pedagogy and sets the context for examination of the ways her pedagogy maximizes literacy learning and teaching through shared inquiry. Pseudonyms replace student names to provide anonymity; the teacher, Sharon Hughes, chooses to have her authentic name appear in print so readers "know there's a real person" in this work.

This paper reports the findings of a naturalistic case study that systematically investigated how Sharon, an exemplary teacher, uses inquiry pedagogy to maximize the literacy learning and teaching in her classroom (Peck, 1995). We know that teachers engage in inquiry, sometimes

called action research in the literature, to improve literacy teaching and learning (Cochran-Smith & Lytle, 1993; Goswami & Stillman, 1987). It is important to study exemplary teacher inquirers, like Sharon, to learn more about their process, to let their questions inform and reform schooling practices. We know that if teachers do not structure their own research into literacy learning, "it is possible that standards that define it will be generated and imposed from those outside the teaching profession" (Smith, 1993, p. 40).

Clark and Peterson (1986) summarized early studies that described teacher thinking processes in molecular, one-dimensional terms. However, these linear studies provided only a limited view of the complexity of classroom processes and indicated the need for a different research agenda (Erickson, 1986). Teacher inquiry has a long history. Dewey (1910) presented five steps of reflective teaching, and he articulated the philosophy of action research, particularly that the end propels the inquiry forward and gives direction to the action rather than terminating it (Dewey, 1916). Bringing action research to the larger research community, social psychologist Kurt Lewin, developed a model that proceeded in a spiral of planning, acting, observing, and reflecting (Kemmis & McTaggart, 1982). Goswami & Stillman (1987) maintained that teachers historically have been observers, questioners, and hypothesizers with the intent of improving learning in their classrooms; concurrently, a shift from the transmission model of teaching and learning to a transactional model supported teacher inquiry. As more and more teachers rely on whole language to theoretically ground their teaching, classroom inquiry is necessary (Edelsky, Altwerger, & Flores, 1991; Goodman, 1986).

This study is rooted in the sociocultural perspective (Weade & Green, 1989) that

recognizes teachers as legitimate knowledge producers through participation in the social events of their classrooms. Teachers who are researchers are more able to teach children how to be researchers (Boomer, 1987) and more likely to recognize learners as legitimate knowledge producers. Inquiry pedagogy includes the learner in the process as it seeks to jointly maximize literacy teaching and learning.

Not much is known about how teachers use inquiry, particularly inquiry shared with the learners in their classroom. It was not the intention of this study to measure effects but to increase understanding of the teacher inquiry process regarding literacy development. This study sought to provide a thick description of an exemplary teacher's process of inquiry pedagogy. Specifically, this study sought to examine how Sharon establishes conditions for and makes decisions about literacy learning and how she evaluates her students as literacy learners. It also sought to examine how she documents what happens and how she uses the information gathered.

Method

The setting for this study was a grade one classroom in the Cleveland School District. Sharon holds a graduate degree in education and has 7 years' teaching experience, all at primary grades. She has taken leadership roles in her building and school district by serving on curriculum and policy-making committees; she has also participated in and provided staff development initiatives on teacher effectiveness and inquiry learning. Her exemplary work has been widely recognized, particularly by her principal and central office administrators and by university faculty working with her in a partnership project.

Data collection occurred during the first 10 weeks of the school year and began with an

interview using semi-structured, open-ended questions; in addition, an informal, conversational interview occurred several weeks later. Each week, Sharon audiotaped a think aloud for a literacy event. Jackie was a participant-observer and videotaped this event so Sharon and I could view it together. We audiotaped her reflections during the viewing. Sharon also audiotaped a log that recorded her subsequent reflections about each event. The interviews and audiotapes were transcribed verbatim. These primary data sources were analyzed as documents. Observation notes and found documents, such as Sharon's written plans and evaluation annotations, were secondary data sources used to support the analysis.

The entire corpus of data was read and portions congruent to the study questions were marked; then the data were combed for patterns or regularities (Goetz & LeCompte, 1984; Lincoln & Guba, 1985). This process was facilitated by use of a software program, The Ethnograph (Seidel, Kjolseth, & Seymour, 1988). Inductive analysis uncovered tentative categories that were refined through the constant- comparative method (Glaser & Strauss, 1967). Two colleagues who were experienced teachers and doctoral students in literacy education served as interraters; their results provided an 82% agreement, indicating that the domains and categories were firm. Moreover, frequent member checks with Sharon indicated accuracy, lending strength to the credibility of the study.

A thick rich description of this exemplary teacher's inquiry pedagogy was constructed to bring her complex process clearly into focus. Case study (Merriam, 1988) accommodates this thick description of classroom events and was, therefore, an appropriate design.

Results

Analysis of data pertinent to each research question yielded the following domains and categories. (Note: The data source of each quote and the date collected are indicated in parens. INT=interview, TA=think aloud, REF=reflection, LG=teacher log, OBS=observation documented by field notes.)

Setting the Conditions for Literacy Learning

Analysis of the data relevant to setting conditions for literacy learning revealed four domains: risk, responsibility, alternatives, and connections. Phrases such as "I always try to..." or "this is why I have them..." characterize segments in these domains.

Risk. Most integral to the success of children in this classroom is Sharon's unequivocable belief in their abilities. Her high expectations for the children initiate many challenges, but the children are never left to meet them without support. Challenge and support are the two categories that emerged from analysis of comments within this domain.

All the children in this classroom have opportunities to engage in higher order thinking and to use sophisticated materials. "The top group does not do the research and the bottom group only read baby books" (REF101894). Materials and activities that present a challenge encourage the children's continuous growth by providing "subtle pressure, that subtle tension to move them on to the next level" (REF9694). Sharon also experiences challenges. Her inquiry pedagogy requires "venturing out and that can be expensive and risky and frightening" (LG92994).

One means of support comes through an environment that is characterized by a "feeling of security and safety. I build that into my curriculum. The very first day of school we do this

whole thing about family...nobody ever has an opportunity to laugh at, poke fun at, or mistreat a member of their family in any way" (INT82694). Sharon establishes and works to maintain mutual respect in collaboration with her children. "They're always considerate of the other person, wanting to help, wanting to share information that'll be beneficial to that person, not hurtful or destructive" (REF11294).

Responsibility. Sharon and the children in her classroom share responsibility for learning--their own and others'. Analysis of the data segments addressing shared responsibility for learning yielded categories of authenticity, ownership, independence, and self-evaluation.

"A literacy learning experience in my classroom has to be authentic and purposeful" (INT82694). For Sharon, this applies to materials and actions. Authenticity of materials is realized through texts the children create themselves, such as "We'll write a thank you letter to the carpet guy who just gave us a new carpet" (INT82694). It is also realized through Sharon's careful selection of materials so "books that they read make sense" (INT82694).

Authentic action involves the children's investigation of sophisticated concepts that they then apply to their own lives. For example, as she thought aloud while planning a Little Red Hen lesson that developed the concept of friendship, Sharon stated,

> Many of these children live in environments where friendship is sort of nebulous. They live in environments that involve a lot of gang activity. They come from households that are less than friendly. They live in neighborhoods that are less than friendly. So I'm expecting them to, as we talk about this, figure out ways that they themselves can be better people in how they treat each other, the friendship that they show towards other

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people. (TA91494)

The second category of this domain is ownership. The first literacy event of the new school year involved the children and Sharon in co-construction of classroom rules. Sharon read a story about a monster whose school had no rules. Then the children provided rules they thought would help the monster be successful in school; later they categorized the rules. "Those things that had to do with hitting, punching, fighting we put together. Those things that had to do with how to treat other people--you know, don't take up all the time on the slide, share, don't sponge people in line--we put all of those things into categories, and from that we were able to then develop our classroom list of rules"(REF83194).

The children in this classroom also express ownership through choice of materials, and this frequently leads to heterogeneous grouping based on student interest (LG9694). In addition to sharing responsibility for selecting materials, the children in this classroom have input into how they create their literacy products. Sharon establishes opportunities for this degree of ownership through careful selection of themes. "It's got to be broad enough to allow for the children to think about it.... When you talk about themes that...have to do more with subjects like family or...with something like a study of myself...those are opening up to allow a lot of room for student input" (REF101894).

A third category of comments in the domain of responsibility is independence. Many comments in this category address strategic reading. "There are certain things that...good readers do, and those are the things that I try to teach them.... You use picture clues to help you figure out what's going on. You use contextual clues. You don't get stuck on a word; you look at the

context, the meaning of that sentence to figure out what that word is. You use some phonics skills.... Does the word you pick make sense there?" (REF91494). Another strategy Sharon encourages her children to use is invented spelling. Ultimately, the children "need to begin to think for themselves" (REF83194).

Three aspects of self-evaluation, the fourth category of this domain, were revealed through analysis of the data. Independent life-long learners need to be able to think about how they think and to know whether what they do is successful or not. "You have to make a judgment as to whether or not, first of all you employed the right strategies, but ultimately whether or not the conclusion you reached was accurate" (REF92294). Another dimension of self-evaluation involves determining the strengths and weaknesses when working with others. "If you look at yourself and you see that this is an area of strength, then you're responsible for sharing that with somebody else in this classroom" (INT82694). Heterogeneous groupings provide venues for this to occur.

Sharon actively participates in self-evaluation of her selection of materials, choice of themes, and the degree of tension she provides her students. The viewing of a videotape taken the third week of school prompted Sharon to evaluate her own pedagogy. "And I guess if I looked at this and said 'Well, this is only the third week of school. I've only had them ten days. I should feel satisfied or comfortable with where they are,' then I wouldn't be this kind of...reflective, critical teacher that I am maybe" (REF91494).

Alternatives. Alternatives form another domain that emerged through analysis of the data. Alternative experiences, materials, purposes, and groupings are the four categories within this

domain. Pertinent segments particularly reflect the multifaceted nature of literacy events in this classroom.

Some children enter the classroom with limited exposure to print. Instead of thinking these children are not developmentally ready for school experiences, Sharon suggests "we should...expose children to a variety of experiences. Then they have that as background information" (REF83194). Shared reading is one way Sharon tries to provide "five years of literacy experiences for those...children who lack those experiences that we consider necessary for success in school" (LG9694).

Using alternative materials exposes children to multiple views. "We've read three or four different versions [of *Little Red Hen*] so we have seen it from a variety of points of view" (REF92294). Talking with each other during literacy events is another way to present multiple points of view. Alternative materials include a variety of genres, levels, and media. "As we went about trying to find answers to our questions, the children got exposed to all different kinds of words, some of which obviously are not 'first grade' words. And that's good" (REF102594).

Alternative purposes are evident too. "If you're only reading for meaning, it doesn't necessarily matter whether every time you choose the right word.... But when you're learning to read sight words, it is important that you pick the right word" (REF92294). Variety in purpose similarly supports invented spelling. "If our purpose here is to write down ideas, then it's not to worry about handwriting, format, or spelling" (REF101894).

In addition, alternative grouping patterns are used in this classroom. Sharon uses homogeneous grouping "to give children an opportunity to interact with people who think

similarly to the way they do or who have similar intellectual levels" (INT82694). She also uses heterogeneous grouping based on the children's choice (INT101894). Whole class grouping gives an opportunity for all children to be "on the same level. No child really, at that point, sees himself as the genius or less than the genius of the group" (INT101894). Partner grouping may involve children of similar abilities, or a higher achieving student with a lower achieving student, or children with a shared interest (INT101894).

Connections. In Sharon's classroom, connections exist in multiple dimensions. Within this domain, numerous data segments formed the categories of curricular integration and social interaction.

Literacy events build upon students' prior knowledge and experience gleaned from their lives outside the classroom and from what they do within the classroom community. For example, prior experiences outside the classroom were tapped in the construction of the classroom rules. Familiar songs and repeated readings build prior knowledge within the classroom (REF11294).

Integration of literacy processes--reading, writing, speaking, listening, and thinking--also provide connections. Writing was intentionally a part of every literacy event that provided data for this study because "the kids actually see how to decode and encode when they do the writing and the reading together" (INT82694). Language experience, another way Sharon integrates writing and reading, helps the children "read their own language which really makes the print meaningful..." (REF102594). Sharon teaches skills, such as vocabulary and phonics, in context to support integration. "We learn the vocabulary in the context of a story. I do my phonics teaching

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out of a story, out of a need" (INT82694).

Integration of curricular areas also happens intentionally in this classroom. Social studies and science are most often identified by Sharon and her students as part of literacy events. "When I select a theme I try to think of all the things that I can...legitimately get into this lesson...to build onto. So that's why I do something like 'Me,' because you can cover so many things--neighborhood, family...houses, designs, habitats, you know, the kind of community you live in" (REF101894).

This classroom presents opportunities to connect life outside school to life inside and to also interconnect various classroom event; but opportunities to make connections in the opposite direction--from classroom events to life away from school--are also established. Children wrote "I Like" books at home because Sharon "wanted the parents to have an idea of what I expect of the children in the classroom, the kind of writing that we do..." (REF91494). One group of children read *Joshua James Loves Trucks* and kept a log of trucks they saw in their community (REF111794).

Interaction, the second category that emerged within the connections domain, has an external, social nature dimension and also an internal, textual dimension. The social dimension appeared frequently in the data through instances of sharing--with peers, with Sharon, in small groups and large. For example, in bellwork time the children "begin to organize their thoughts on a concept, and then we share those ideas...either with the whole class, with a partner, or a small group, but always to share" (REF92994). Social interaction often resulted in the creation of a collaborative product, such as a poster to show how friends help each other inside the house and

outside the house that small groups created after reading and talking about these concepts in *The Little Red Hen* (TA91494).

Making Decisions about Literacy Learning

Sharon does not make decisions about her childen's literacy learning in discreet units or at predetermined times. She describes her decision-making process as "always evolving. And that is what literacy learning is all about. The students aren't the only person[s] learning through the literacy experiences, but I am too. Each time I'm gaining insight and adding to a repertoire or throwing out stuff that doesn't work..." (INT82694). A salient example is the literacy event that occurred on the first day of the school year. For the first time, Sharon decided that she and the students would co-construct the classroom rules. She decided to share this responsibility because "I think that I've sort of stifled them in many instances, and that was one area that I didn't think that I trusted them in. I just kind of decided that I would try trusting them" (REF83194).

Sharon's decision-making process is recursive, multifaceted, and shared with the learners in her classroom. Many pertinent data segments demonstrate that Sharon considers conditions for literacy learning when making decisions, illustrate how her planning decisions begin, and reveal the elements of her decision-making process in rich detail. These are the domains that emerged from the data.

Conditions. For Sharon, establishing conditions and making decisions are reciprocal functions. She establishes conditions by deciding to do certain things, and she makes decisions in consideration of the conditions. "[Conditions] are always there in my head when I decide on the kind of literacy experience I'm going to share with the children" (INT82694). Comments about

risk, responsibility, alternatives, and connections form the categories of this domain and illustrate the reciprocity.

Within the risk category, segments address both challenge and support. Sharon articulates her decision to challenge all the children in her classroom by saying, "I have decided to teach as if...this is the last year that they'll go to school" (REF11294). Sometimes Sharon's decisions are driven by a need to offer support to a child struggling with a difficult task. Reflecting on one of Tara's miscues, she commented, "She's already insecure about doing the wrong thing.... Now, I'm going to ask her to read the sentence that she's already made a mistake on...? So I decided not to" (REF92294).

Segments that illustrate joint decision-making comprise the responsibility category. It is the children's need to know more that helps Sharon decide how long to work with a particular book or theme. For example, during a literacy event on a Pilgrim theme, the children said, "Well, we need to find out more about this. We want to know more about...the games they'd play. We want to see...some pictures about the houses that they helped to build" (REF11294). Sharon's think aloud for this literacy event shows her intentional planning for this input: "We will then decide what we want to know, and then we'll chart out what we need to learn" (TA11294).

The data that comprise the alternatives category involve maintaining balance and consideration of multiple materials, purposes, views, and groupings. Sharon struggles to balance opposing concepts, such as authenticity and purposefulness with fantasy and pleasure (INT82694). She also considers alternatives in deciding to "expose those children to as many resources as I can" (REF11294) and in making selections depending on the purpose for their use.

"I think about the kind of skill developing I'm going to do with that book and what that student's need is" (REF102594). Additionally, she considers the child's point of view (REF9694) and alternate professional views. "This child has grown three years in the course of a year. How do you fail that child? On the other hand, he can't read that basal book that that second grade teacher is going to hand him.... So what do I do then?" (REF91494). The alternative grouping patterns that were described in a preceding section also impact Sharon's decision-making.

Sharon considers connections when making decisions about literacy learning. Comments that form this category include a decision to integrate fairy tales throughout curricular themes (INT82694) and a plan to involve the Chapter I teacher in material selection so they might "make some of those decisions together" (REF92294).

Planning. Sharon's decision-making involves global planning and begins with a year-long curricular map that "doesn't contain a whole lot of information, but it'll have the months. It'll have each subject area and then...I look at my objectives and decide where I want to teach it" (REF101894). It is "only a guide for me" (REF102594). It is important for Sharon that plans not be static and limiting. "Daily plans are written daily" (REF101894) and planning decisions are continually made and re-made, often with input from the students. "This approach...has required more thought, more deciding, making more decisions than before because...now you have to pick not just what objective you're going to teach, but where you're going to go if the children decide that they want to learn an objective that you hadn't planned to teach" (REF11294).

Process. Sharon's decision-making process is highly complex. Sharon consistently does several things when making decisions about her students' literacy learning. She observes; she

questions; she REsearches (Berthoff, 1987) her own practice and researches the professional literature; she makes changes and develops further plans. She invites the children in her classroom to share in aspects of this decision-making process, exemplifying how responsibility is a condition embedded within decision-making.

A pattern emerges from analysis of the data, but it appears in several variants. The least complex decision-making variant is observe, question, REsearch, change (O-Q-R-C). More complex variants reveal the recursive nature of the process, such as observe, question, REsearch, change, question, REsearch (O-Q-R-C-Q-R). Whether the observations are explicitly stated or only implied, Sharon's questions emerge from them. It is important to note that all of the variants of the decision-making process include the same elements in some configuration. These elements emerged as categories within the process domain; but the salient feature of Sharon's decision-making process is the complex interaction of these elements.

Table 1 shows the variants that appear in the data and graphically portrays the complex, recursive nature of the process. The table also demonstrates how occasional incomplete portions of the decision-making process refer to earlier segments that document the initiating observation or address the same question. Long strings of elements address topics such as global curricular change (i.e., from a transition model to inquiry pedagogy) and a gender inquiry. These strings include multiple changes. Short strings that begin with questions typically address topics of classroom interaction such as where the children should sit and how they are attending.

Sharon's observations have multiple dimensions. She molecularly observes individual children, and in a molar sense, she observes long-term curricular development. For example,

Table 1 Decision-Making Patterns

DATE	PATTERNS (topic)			
INT82694	O-RE-C (revamping curriculum)	O-Q-RE-C-Q-RE-C (revamping curriculum)	O-Q-O-C (long term impact of curriculum)	O-Q-RE (authentic evaluation)
REF9694	O-Q-RE-C (least experienced group)	O-Q-RE-C-Q (maximize)		
LG9694	RE-Q-RE (time use)	**[O]-Q-C** (gender)	O-Q-RE (least experienced group)	
REF91494	*O-Q-RE-C (modeling)*	O-Q-RE (learn to read same as speak)	RE-C (good teachers)	**O-Q-RE-C-O-C (gender)**
LG91494	[O]-Q-RE (literacy event)	**O-Q-RE-Q-C (gender)**	O-RE-C (groupings)	
REF92294	O-Q-RE (ownership)	*O-Q-C* (seating)	O-Q-RE (self-esteem)	Q-RE-C (expectations)
	Q-C-RE-Q (revamping curriculum)	*O-Q-C-RE (ownership)*	*Q-C-RE-Q (retelling)*	
TA92994	**Q-RE-C (gender)**			

Table 1 (continued)

DATE	PATTERNS (topic)			
REF92994	O-Q-O (affect)	RE-C (revamping curriculum)	O-C-Q (expectations)	RE-Q-RE-Q (inquiry process)
	Q-RE (evaluation)	**O-Q-C** **(gender)**		
LG92994	Q-C-O (bellwork)	Q-O-RE (overstimulation)		
INT101894	Q-C (drill and practice)			
REF101894	O-Q (side conversations)	*O-C* *(learner input)*		
REF102594	Q-RE-C (time use)	O-Q (seating and attention)	**Q-O-RE-C** **(gender)**	
REF11294	Q-RE-Q (evaluation)	Q-RE (improving practice)	*O-RE-C* *(write words on board)*	
REF111794	RE-C-C (seatwork)			
REF112994	O-RE-C (flashcard word identification)	O-RE (matching sounds)		

Note. In-flight decisions appear in italic; gender inquiry appears in bold.

Sharon observed that David chose to modify her directions for a literacy product that he was creating (LG92994). In a molar observation of her own practice, Sharon noted, "When you talk about the idea of repetition...how do you do the repetition without it becoming drill and practicy? And that's one of the things that I'll be spending this year in looking at" (INT82694).

Questioning embodies Sharon's "need to know" and is within the purview of the children also. Typically Sharon's questions are global in nature, addressing issues such as how to provide opportunities for skill practice that are commensurate with the conditions she feels are so integral to literacy growth (REF9694), or how to choose themes for integrative units that have meaningful substance (LG91494), or how to group children in ways that build and maintain their self-esteem (REF101894). Other questions involve procedural strategies such as what and when to chart information during literacy events (LG101894). Much of Sharon's questioning is self-evaluative (LG91494). The children too must be asking questions; Sharon feels this is a critical aspect of literacy learning. "And if they're not stopping and thinking and evaluating and asking themselves these questions, it's all pretty futile" (INT101894).

Sharon researches the professional literature before making decisions about materials or about planning for talk in the classroom (REF101894). But Sharon also REsearches her classroom practice by regularly revisiting the literacy events to evaluate the children's growth and the effectiveness of the event (LG91494) and to consider alternatives and their possible outcomes (REF112994).

Comments in the data indicate that change is a category within the process domain. Sharon and her children engage in outward and inward change. Outward change is observable

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and involves, for example, Sharon's selection of literacy materials (INT82694) or instructional approach (REF11294). The children often exhibited change through different behaviors outside the classroom. "After a study of animals or nature, they feel compelled to do something for the environment of those animals, to make the world a little better for those animals. You know, they don't throw paper around the same way, or they have an opinion when they read things about the natural parklands or natural settings being destroyed" (REF91494). Change may be less visible and involve altered views of the world. "Every time we read or gain new insights, we're altered in a way. We should no longer see the world the same way" (TA92994).

Evaluating Students as Literacy Learners

Analysis of segments pertaining to evaluation yielded four domains, namely observing, listening, assessing, and self-evaluating.

Observing. The majority of the segments pertaining to evaluation involve Sharon's observations that inform her instructional decision-making and evaluation of the children's literacy growth. This dual use of observation is a hallmark of "kid watching" (Y. Goodman, 1978). Sharon observed the affective dimensions of her children's participation in literacy events (REF112994) and their development of literacy concepts (REF83194). Sometimes her observations focused on individual children. "He still doesn't have a handle on one-to-one correspondence, but he knows now that we're reading. We're pointing to the words" (REF92994). Social interaction is another aspect that Sharon evaluates by observing. "They not only shared their own works, but they listened very carefully and responded very appropriately to their group members' ideas" (LG9694). Observation of students' products also yielded evaluative

comments. "The children labeled these pictures also so I got a very good idea of where the children are with their spelling skill, with their ability to apply phonetic skills, to encoding" (LG92994).

Listening. Sharon complements her "kid watching" with "kid listening" (OBS102594). Analysis of the data pertinent to listening yielded four categories. Sharon intentionally listens to her children's dialogues with each other (TA111794), to the questions they pose (LG92994), and to their retellings of stories (REF9694). When Sharon needs specific information she asks the children questions in a straightforward manner and then listens to the answers they give (REF111794).

Assessing. Sharon defines evaluation as a superordinate concept that includes assessment, which she defines as a measurement of child's development relative to a "benchmark" (REF92994) or external criterion, such as district-wide standardized tests. Data segments addressing assessment describe informal procedures, particularly analysis of annotated information (INT82694) and written product such as book illustrations created by the children (LG92294). The children are invited to share in the evaluation also. "To me, assessment is where you're asking the children to apply some external set of standards, and I'm asking them to measure up to those standards to determine how their [work] fits this outside set of criteria" (REF92994).

Self-evaluating. The children also evaluate the answers they find to their questions. "When you talk about creating this inquiry based environment where you've got children...asking questions, doing the research, and answering those questions, they have to be a part of

evaluating...the quality of their answers" (INT101894). This evaluation itself must "take on an inquiry nature also...and that means that the [children] have to be involved in that" (REF92994).

Documenting What Happens

Sharon's documentation of literacy learning is driven by her complex process of evaluation. The two domains that emerged from analysis of the data relevant to documentation are individual and wholistic.

Individual. Two categories emerged from the data within this domain. Portfolios of comprehensive work samples (INT82694) and students' logs (REF111794) serve as pieces of individual documentation. Copious teacher annotations, of individual growth (LG92994) or individual children's attention to a literacy event (REF102594) for example, provide a rich body of documentation. Sharon records annotations on post-it notes or adhesive labels and then attaches them "to the student's folder or information sheet" (REF83194). Sharon also planned to use computer labels to expedite the process. "I want space for the date...I want the labels to already have the children's names on them...whatever it is that I'm interested in watching for that week...and just a blank space at the bottom for me to make up a note" (REF9694).

Wholistic. Comments addressing documentation of global evaluation form three categories--teacher logs, classroom charts, and videotapes of classroom literacy events. Sharon documents her wholistic observations of curricular integration in a thematic notebook. She regularly charts the ideas, questions, and findings that emerge through classroom inquiries and particularly includes input from the children (OBS101894). Videotapes provide another important document of classroom literacy events (TA92294; REF92994).

Using the Information Gathered

Sharon uses the information she gathers to continue inquiries, to culminate inquiries, and to begin new inquiries. Many data segments demonstrate how the information gathered feeds back into the decision-making process in both formative and summative ways. Several data segments also demonstrate that the information is used in publication.

Use in making decisions. Sharon's use of information is implied in the decision-making process as part of the REsearch, or new questions, or plans to make changes--the three categories that emerged within this domain. Use of information to inform further REsearch results in an upward spiraling process. "I wrote the answer down but I said we need to...examine information for ourselves. So even though this is a possible solution, let's look into it and check it out" (REF101894). Often Sharon uses the information she gathers to raise new questions (REF101894) or make curricular changes. "When now I go to pick material...these findings will influence the kind of material that I pick" (REF102594).

Use in publication. Sharon feels both she and her children have a responsibility to share what they learn. The children share information with the public through hallway bulletin boards such as the Mayflower display (OBS11294). Sharon frequently provides staff development and presents findings at conferences. Parents are another audience for the children's work (LG92294) and Sharon's insights into their literacy development (INT82694).

Discussion

These results demonstrate that the linear model of action research so often used in business and industry does not adequately or accurately describe Sharon's inquiry pedagogy.

Early models of action research (Kemmis & McTaggart, 1982) began with planning; Table 1 demonstrates that Sharon's process typically begins with observation or a question and supports Goswami & Stillman's (1987) finding that teachers historically observe and question. Numerous references to "shared inquiry" and "shared responsibility" deny that conditions, decisions, and evaluations in this classroom are skill-driven. Sharon's inquiry pedagogy is not a method that can be learned by sequential steps; there is no "teacher's manual" suggesting daily classroom lessons. "It's not a pre-existing curriculum that you can put into place...It doesn't work that way" (REF92994). How, then, does it work? What are the significant dimensions of Sharon's inquiry pedagogy? The results of the data analysis suggest six.

1. Prospective/retrospective is a dimension repeatedly appearing in the data. Sharon thoughtfully considers the literacy learning in her classroom before the events take place and repeatedly after they occur. The reciprocity of establishing conditions and making decisions echoes the reciprocity of thought and action that Hancock (1993) found was at the heart of teacher inquiry. Sharon's intentionality and consistency in establishing conditions support earlier accounts of the importance of conditions in literacy development, particularly the role of high expectations (Edelsky, Altwerger, & Flores, 1991; Good, 1987; Vacca & Rasinski, 1992).

2. Molar/molecular is another dimension recurring throughout the data. Aspects of decision-making, evaluation, and documentation all range from molar to molecular proportions. The basic unit of Sharon's planning is a global, year-long curricular map, not a linear sequence of daily activities as earlier research suggested (Yinger, 1979). Sharon's decision-making process appears in many variants ranging from complex, recursive strings to simple observe-change

instances. The results shown in Table 1 indicate the process encompasses a broader scope than earlier research addressed, and it indicates a variety of thinking patterns only hinted at in earlier research (McNair, 1978-79). Even Sharon's in-flight decisions reach molar proportions, such as evaluating children's responses during the event because "as I'm standing there, there's...always this debate of taking them as far as I can get them" (REF92294). These words describe a complex process that is not limited to one particular student outcome and therefore, highlight the gross inadequacies of early process-product research (Clark & Peterson, 1986).

3. A third dimension is question-asking/question answering. Sharon expects her children to ask questions as much, or more, than answer them. She consciously maintains the healthy tension that Dewey (1916) considered a necessary condition for learning. Questions initiated by the learner are the essence of inquiry pedagogy (Stauffer, 1969). Ruddell (1995) found that problem-posing instruction is one characteristic of Influential Teachers.

4. Planful/in-flight is a dimension particularly evident in Sharon's decision-making process. Some decisions are made after long-term, intentional planning. The inquiry that initiated Sharon's development of inquiry pedagogy--the question of how to help the children who have limited literacy experiences be successful in school--has been very intentionally planned and implemented over time (INT82694). In other instances, a decision needs to be made "in-flight," almost spontaneously during the event (REF101894).

5. Aspects of formality/informality provide another dimension. Sharon conducts formal research of professional literature and engages in formal assessments, such as district-wide standardized testing. Sharon also REsearches (Berthoff, 1987) the body of knowledge she

informally and systematically collects in her classroom, and she predominantly relies on informal assessment and evaluation procedures.

6. The introspective/enacted dimension clearly recurred throughout the data. Sharon expects herself and her children to be changed because of literacy events. The change may be external, visibly revealed through actions; or the change may be internal, a different way of thinking not yet transformed into action. This expectation of change influenced Sharon's development of inquiry pedagogy. Her observation that for 20% of the children in her classroom, learning to read "wasn't even fun for them. It was a frustrating, horrifying experience" (INT82694). With the support of her building principal, she began to question and to REsearch the theoretical framework of wholistic literacy development; then she decided she needed to make changes. But that raised new questions. "OK. I sat down and I said, 'What can I do?' Not 'What can the [children] do ?' Not 'What can the parent do?' But 'What can I do?' This is what I concluded" (INT82694).

Sharon's conclusion offers an alternative to the finding of Allington and Li (1990) that teachers placed responsibility for children's lack of success in literacy outside the school. Sharon owns her responsibility in the fullest sense possible, and in this way, directly supports the ownership of learning that she expects of the children in her classroom. Moreover, it makes positive change possible. One of the first changes Sharon made in her classroom was to increase the amount of reading aloud. Then she supplanted the basal text with a variety of trade books and engaged all the children in wholistic literacy events. Thus, she actively lessened the "Matthew effects" (Stanovich, 1986) so pervasive in traditional schooling.

This enactment of Sharon's internal change in thinking developed into her inquiry pedagogy and ultimately became the substance of this study. Her articulation of how participation in this study has changed her thinking supports Kagan's (1990) suggestion that inquiry results in teachers taking hold of the responsibility for their practice and being open to ensuing changes. "I think I'm getting clearer too on what a literacy event is...as I watch the videotapes, as I think about what I'm thinking, it's becoming clearer to me" (REF92994).

Conclusions

These dimensions lead to conclusions that recognize inquiry pedagogy as an organic, dynamic process. These conclusions shape a model of inquiry pedagogy that encompasses its complexity and interconnectedness. The model graphically portrays the process that maximizes literacy learning and teaching.

Reflective practice has a thinking-forward component. This is embodied in the prospective thinking that establishes conditions and considers alternative actions in the process of making decisions. Sharon intentionally establishes certain conditions for literacy learning. Forty per cent of all coded segments made reference to this intention, indicating its prevalence in her thinking. This attention to conditions for literacy learning is more important than typically recognized in traditional practice.

Inquiry pedagogy involves molar planning, evaluating, and documenting. This is in addition to the daily, individual focus of plans, evaluations, and documents of traditional classrooms, and it receives equal attention. Distinguishing features of Sharon's process include the year-long curricular map, molar evaluation of curriculum and social interaction, rigorous self-

evaluation, and extensive wholistic documentation.

For both the learners and the teacher, knowing how to ask questions is equally important to knowing how to answer them. Literacy learning takes place when there is a healthy tension between the unknown and the known. The questioning and answering that occur in this classroom are not done in a perfunctory manner; they are purposeful and sincere.

Inquiry pedagogy is predicated on trusting the learners to be knowledge producers. This requires letting go of control of the literacy events and recognizing that learners are also teachers. Thus, the literacy events are learner-centered, and the teacher is not the sole source of knowledge.

Inquiry pedagogy is predicated on trusting the teacher to be a knowledge producer. The inquiry teacher must be a risk-taker whose recursive process of observing, questioning, REsearching, and changing yields new knowledge and new questions.

Those engaged in inquiry pedagogy trust the process. There will be discomfort but it must be embraced to realize the benefits of literacy growth for the learners and for the teacher's greater understanding of the process of becoming literate. Moreover, the process must begin with the teacher (Boomer, 1987). "You have to first become an inquirer...then it moves out from you to the curriculum to the [children]" (REF92994). For Sharon, this was the "most difficult part of the process" (REF92994).

The Model

The integrity of Sharon's inquiry pedagogy is strong. The interdependence and interaction of its elements reveal its coherence. Sharon described the seamlessness of her classroom: "You

see, in my classroom it's real hard for me to figure out what anything is because the day isn't boxed, you know, it isn't compartmentalized. It's hard for me to see where an event...begins and ends because it kind of goes like--shoosh--all day!" (REF92994).

The results of this study indicate that Sharon's inquiry pedagogy is indeed a messy process and one that is difficult to capture in a two-dimensional model. Figure 1 graphically portrays the process as a wheel with the decision-making elements--observation, questions, REsearch, change--at the hub, the center around which the process revolves. Spokes connect the decision-making to the other elements of the process; the rim connects them to each other. Sharon establishes conditions that support shared decision-making; then she observes, questions, or REsearches those conditions as they impact the children's literacy learning. She observes and REsearches to evaluate the children's literacy growth; then her evaluations further inform decisions she makes. An on-going decision for Sharon is what and when to document; then the documentation she gathers becomes the substance of new REsearches. Sharon gathers information through her process of making decisions, and then cycles that information back into the decision-making process, using it to inform and reform her practice.

This figure adequately represents what Sharon does, yet it is incomplete. Her pedagogy is shared with the learners. She expects them to become teachers also and expects herself to be a learner. The hub then, is teacher and learners--partners in inquiry--sharing decision-making and

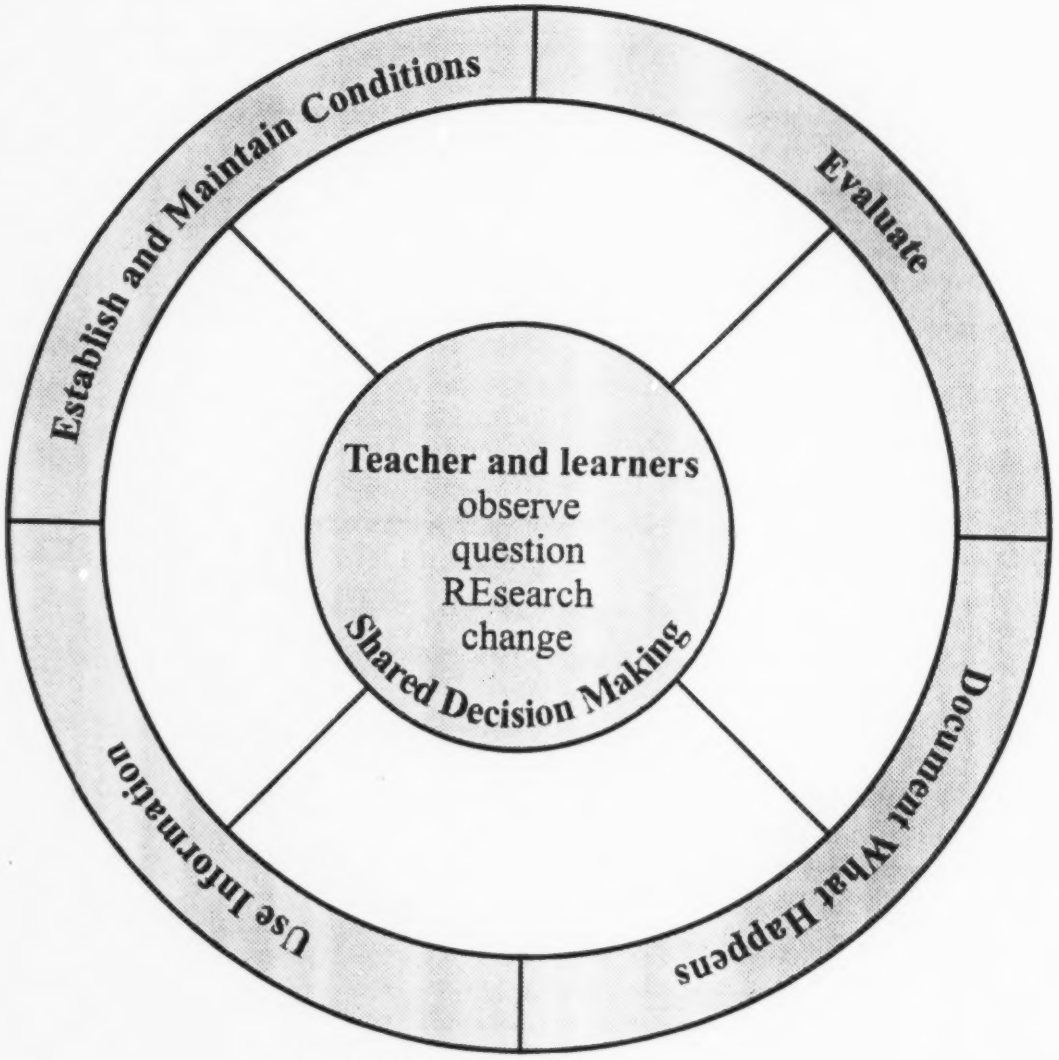
Inquiry Process
Figure 1

subsequently, the other elements of the process (see Figure 2). This reciprocity, teacher as learner and learner as teacher, and both as inquirers, is the essence of inquiry pedagogy. How it maximizes literacy learning and teaching is best articulated in Sharon's words.

> I have always looked at education as...what the student learns, what the student gets out of an experience, whether or not the student's needs were met. But as I grow and develop, what I'm looking at now is almost "What do I get out of it? How am I growing? How am I developing? How am I changing?" It's that reciprocity that leads to a successful year. When I'm teaching and learning, and when they're teaching and learning, at the end of the year we all grow. And if I have one year where I haven't grown any, that's either been a very unsuccessful year or it's time for me to retire. (INT82694)

Implications

This study offers significant implications for staff development, teacher education, and further research. Effective staff development programs will need to address issues of process and affect. First, teachers need to become problem-finders. They need opportunities to explore problem-posing, to become comfortable with the ambiguity inherent in inquiry, and to help the learners in their classroom do the same. Dialogue with others who are implementing inquiry pedagogy is one means of support. Collaboration is another, and time for it needs to be provided within the school day. Staff development efforts need to continue over time to support the evolving nature of the process of inquiry pedagogy. Optimally, staff development on inquiry pedagogy must also include administrators and policy-makers because teachers will need to be



Inquiry Pedagogy 37
Figure 2

trusted to choose appropriate literacy materials, to evaluate literacy learning, and to provide adequate supporting documentation.

Implications for teacher education parallel those for staff development. Preservice teachers, like practicing teachers, need opportunities to become adept at problem-finding and problem-posing. They need also to be encouraged to think forward about establishing the conditions that support literacy learning, to plan globally for substantive thematic units, and to accommodate student input in decision-making. To increase their comfort with ambiguity, they need the support of dialogue and collaboration within their preservice classes.

Implications for research include a need to cast teacher decision-making in broader terms. Decision-making must be examined over time to capture the complexity of the process. Moreover, it is important to look for answers in appropriate places. Almost three-fourths of all think aloud segments addressed establishing conditions; therefore, it is more likely that teacher thinking about establishing conditions for literacy learning would appear in think alouds more often than in reflective journals. Almost one-third of the segments coded in the logs addressed evaluating literacy learning. To examine this thought process, logs kept over time hold more promise than think alouds or immediate reflections on a literacy event.

Significance of the Study

This study offers encouragement and support for other inquiry teachers and provides ways for them to understand their own process. The model places a new tool in the hands and minds of those interested in maximizing literacy learning. Literacy does change us. Sharon is a different teacher because of it. Inquiry pedagogy involves facing the discomfort of tension and ambiguity;

it involves honest self-evaluation and the courage to make changes that are indicated; it moves us from the complacency of our reading corners into the challenges of the world. Sharon plans for this to happen in her classroom through inquiry shared with the learners, and as the richness of the data demonstrates, they show growth in literacy in profound ways.

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